value unit **328** and a square unit **325**. The absolute value of the received signal obtained by the absolute value unit **328** and the square value obtained by the square unit **325** are supplied to a signal-to-noise (S/N) ratio measuring unit **329**.

In the signal-to-noise ratio measuring unit **329**, the signal-to-noise ratio is measured by deriving noise power from the difference between the average value of squared value input and the squared value of the average of the absolute value input and deriving signal power from the squared value of the average of the absolute value input. In a comparator **330**, the measured signal-to-noise ratio is compared with a reference signal-to-noise ratio value. From the comparator **330**, a power control signal PC-i for requesting the base station to increase or decrease the transmission power is outputted.

The power control signal PC-i is multiplexed in a multiplexer **317** with a data signal to be transmitted from the terminal and subjected to encoding process for error correction in an encoder **318**. In a multiplier **320**, the encoded signal is multiplied by pseudo-noise generated by a pseudo-noise generator **319** and thereby subjected to spread spectrum modulation. The signal subjected to spread spectrum modulation is converted in a radio frequency circuit **321** to a signal in the transmission frequency band, then supplied to the antenna **301** via the circulator **302**, and emitted in the air.

FIG. **13** shows the configuration of a transmitter and receiver circuit of a base station.

Signals from supplied respective terminals and received by an antenna **110** are inputted to a radio frequency circuit **111** via a circulator **109** and converted therein to base band spread spectrum signals Rx.

The base band spread spectrum signals Rx are inputted to a plurality of modems **105-1**, **105-2**, . . . , **105**-N respectively associated with terminals located in the cell. As a result of de-spreading process and decoding process executed in these modems, transmitted signals (received data) **112** of respective terminals are separated from power control signals PC multiplexed with the transmitted signals and transmitted by respective terminals.

The power control signals PC outputted from respective modems **105**-i (i=1, 2, . . . , N) are inputted to a transmission power controller **116**. In response to respective power control signals PC, the transmission power controller **116** generates transmission power specifying signals PW associated with respective terminals.

To transmission data **101** to be transmitted from the base station to each terminal, the modem **105**-i (i=1, 2, . . . , N) applies-encoding process and spread spectrum modulation process using pseudo-noise PN unique to the base station generated by a pseudo-noise (PN) generator **103** and an orthogonal code (W1, W2, W3, . . . , or W_N) generated by an orthogonal code generator **102**.

The signal modulated by spectrum spreading is amplified with transmission power depending upon the signal PWi for specifying transmission power associated with each terminal and outputted from the transmission power controller **116**, and outputted as transmission signal Tx-i (i=1, 2, . . . , N).

Numeral **104** denotes a pilot signal generator for generating simple pattern data such as all zero data. This pilot signal is subjected to spread spectrum modulation by using pseudo-noise PN unique to the base station generated by the pseudo-noise generator **103** and a specific orthogonal code W_0 generated by the orthogonal code generator **102**, and thereafter outputted as a pilot signal. Each terminal senses a cell boundary on the basis of a change of the pilot signal caused by movement of the terminal and changes over from one base station to another base station between two adjacent cells.

Transmission signals Tx-i (i=1, 2, . . . , N) addressed to respective terminals are successively added by cascade adders **107** (**107-0**, **107-1**, . . .), thereafter converted to signals in the transmission frequency band together with the pilot signal by a radio frequency circuit **108**, and emitted in the air via the circulator **109** and the antenna **110**.

FIG. **14** shows an example of configuration of the modem **105**-i (i=1, 2, . . . , N) illustrated in FIG. **13**.

Transmission data **101** inputted to the modem **105**-i is inputted to an encoder **201** and subjected therein to encoding process for error correction. The encoded signal is multiplied in a multiplier **202** by an orthogonal code Wi and thus subjected to a first stage of spectrum spreading. The output of the multiplier **202** is multiplied in a multiplier **203** by a pseudo-noise signal PN and thus subjected to a second stage of spectrum spreading. The signal thus subjected to spectrum spreading is inputted to a variable gain amplifier **204**, amplified therein with a gain specified by the transmission power specifying signal PW-i, and outputted as a transmission signal Tx-i.

On the other hand, the received signal Rx inputted to the modem **105**-i is inputted to a multiplier **205**, and subjected therein to de-spreading process using pseudo-noise PN generated by a pseudo-noise generator **206** which is identical with pseudo-noise PN used for spectrum spreading in the terminal wherefrom the signal Rx is transmitted. The de-spreaded signal is inputted to an accumulator **207** and the signal over a predetermined time is accumulated.

This accumulated de-spreaded signal is inputted to a decoder **208**, therein subjected to decoding process for error correction, split into decoded received data **112** and the power control signal PC-i transmitted by the terminal, and outputted as the received data **112** and the power control signal PC-i.

By the configuration heretofore described, each terminal informs the base station of reception signal-to-noise ratio of a signal transmitted from the base station to its own terminal, and the base station controls the transmission power so as to make the reception signal-to-noise ratio of each terminal equivalent to a desired signal-to-noise ratio.

In the above described conventional spread spectrum communication system, each terminal measures the signal-to-noise ratio on the basis of only a signal transmitted by the base station and addressed to itself. That is to say, the signal-to-noise ratio is measured by regarding variance of amplitude of the received obtained by de-spreading as noise power and regarding square of average amplitude as signal power.

However, the principle of the above described conventional signal-to-noise ratio measurement is premised on the fact that the signal amplitude becomes constant in case there is no noise. In a mobile communication system, however, the amplitude of the received signal of each terminal varies violently as the terminal moves. For obtaining a reliable result of signal-to-noise ratio measurement in each terminal, therefore, the measurement must be completed in such a comparatively short period of time that the amplitude of the received signal can be regarded as approximately constant.

In the conventional terminal, therefore, circuits having extremely high speed performance are demanded for the signal-to-noise ratio measurement circuits **325-329**. If it takes time to measure the signal-to-noise ratio from restrictions of circuit performance, correct measurement results of the signal-to-noise ratio are not obtained. This results in a problem that the base station cannot implement suitable power control on the basis of the power control signal supplied from the terminal.